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## REGIONAL ACTION PLAN (RAP) TO ENHANCE THE EFFECTIVENESS OF A NETWORK OF MARINE PROTECTED AREAS IN SOUTHEAST ASIA

### EXECUTIVE SUMMARY

#### INTRODUCTION

There is much variability in the range of framework being utilized in the management of Marine Protected Areas (MPAs) in various countries of the ASEAN. The variance is most likely a result of the differences in the socio-economic (e.g. modes of governance resulting from their political economy) environments and cultural history of these states. Despite the inherent constraints available in the limited data sets being analyzed, some generic trends are apparent.

An analysis of the existing global representative system of marine protected areas in 1995 found that MPAs are not evenly distributed around the world's oceans. The researchers analyzed the distribution of the 1,306 MPAs in their inventory (those with a sub-tidal component). The result is given below:

Marine Region	No.	%
Antarctic	17	1.3
Arctic	16	1.2
Mediterranean	53	4.0
N.W. Atlantic	89	6.8
N.E. Atlantic	41	3.1
Baltic	43	3.2
Wider Caribbean	104	7.9
West Africa	42	3.2
South Atlantic	19	1.4

Marine Region	No.	%
Central Indian O.	15	1.1
Arabian Seas	19	1.4
East Africa	54	4.1
<b>East Asian Seas</b>	<b>92</b>	<b>7.0</b>
South Pacific	66	5.0
Northeast Pacific	168	12.8
N.W. Pacific	190	14.5
S.W. Pacific	18	1.3
Australia/N.Z.	260	19.9
<b>Total</b>	<b>1,306</b>	

The number of sites per region range from 260 to 15. Fifty-five per cent of MPAs were in only four regions (the Wider Caribbean, Northeast Pacific, Northwest Pacific, and Australia/New Zealand). Six regions (the Antarctic, Arctic, South Atlantic, Central Indian Ocean, Arabian Seas, and Southeast Pacific) had fewer than 20 Marine reserves each, and together accounted for less than 10 percent of the total. In Southeast Asia, the number and status of marine reserves in four countries of the region are given below:

COUNTRY	EXISTING	LEGISLATED	PROPOSED	TOTAL
Indonesia	13	66	42	121
Malaysia	4	5	22	31
Philippines	9	43	5	57
Thailand	4	7	14	25
Total	30	121	83	234

## GAPS

There are gaps in MPA establishment and recommendations, which pose as challenges for MPA management in the ASEAN region. The gaps may be classified under a knowledge gap in the understanding of MPAs and biodiversity conservation, and those, which relate to improving the effectiveness of MPAs. A top research priority is to improve the knowledge base on the design (e.g. *sensu* the debate on the many small-sized MPAs versus a few large MPAs) and how these relate to the espoused objectives and function of MPAs. How do stakeholders benefit from MPA management interventions vis-à-vis the effectiveness of an MPA to conserve biodiversity and/or sustain fisheries production?

## WHAT HAVE MPAs ACCOMPLISHED?

Marine Protected Areas, areas protected from fishing, seem to offer the only buffer that can hedge against uncertain stock assessments, a changing environment and heavy fishing pressure. Their key selling point is that such refugia may represent the only credible way of sustaining and increasing fisheries catches in the long term.

The idea that marine reserves can build and maintain healthy fisheries is largely based on the following hypotheses:

- ?? Spawning stock biomass will increase within the reserve boundaries;
- ?? Larvae will be transported out of the reserve to replenish nearby fishing grounds;
- ?? Some adults will migrate outside of reserve boundaries; and
- ?? Genetic diversity will be preserved.

## REASONS FOR LACK OF EFFECTIVENESS

As part of a recent report, field surveys were performed on 383 MPAs worldwide to assess management effectiveness, or how effective marine reserves were in achieving the objectives for which they were intended. The result is given below:

Management Effectiveness	Number of MPAs	Percentage of MPAs
Achieved Objectives	117	31%
Partially Achieved Objectives	155	40%
Failed to Achieve Objectives	111	29%

These data would suggest that nearly one third of existing MPAs fail to achieve their management objectives. There exist four general reasons why a large number of MPAs worldwide are ineffective, i.e., they failed to meet their objectives: absence of substantial social science research to explain variations in MR performance, paper parks, lack of enforcement, and conflicting objectives.

## THE RAP: BACKGROUND/CHRONOLOGY

The WCPA-SEA-Marine workshop (Bangkok, 9-11 May 2002) aimed to develop a "Regional Action Plan" to strengthen and improve the effectiveness of a network of MPAs in Southeast Asia. This initiative to support MPAs restricted areas in Southeast Asia has four phases:

**Phase I: 2000 – 2001:** Launching of the WCPA-SEA Marine working group during the 9th International Coral Reef Symposium in Bali (Oct 2000); 5 working groups were established: 1) planning and design, 2) adaptive management, 3) coordination and enforcement, 4) community awareness and development, 5) sustainable financing;

**Phase 2: 2002:** Development of the Regional Action Plan (RAP) through an ongoing network dialogue with a network of conservation practitioners and experts.

**Phase 3: 2003:** Conservation practitioners, experts and representatives of donor agencies were invited to finalize the RAP and the proposals at the workshop in Bangkok, May 9-11. The organizers will produce and distribute the RAP portfolio and seek funding opportunities for the RAP.

**Phase 4: 2003:** Implementation of the RAP and continue the strengthening of the WCPA-SEA-Marine Working group capacity in three directions: Coordination and networking; Information; and Facilitation

## **FEATURES OF THE PLAN**

The Regional Action Plan (RAP) is a coherent body of information intended to coordinate and complement existing related plans of action in the region. Through inputs from the network of experts and the workshop in Bangkok in May 2002, the RAP consolidates acknowledged areas of strength of member nations –individually and collectively, focused on building national and regional capacity to implement the action points. It identifies the necessary actions to address the issues of common concern, while remaining sensitive to those unique for individual member nations. It also remains flexible in meeting new challenges in the next decade.

The major output are project or programme proposals with clear and achievable future plan of action in which the implementation is phased and carried out both by individual countries themselves as well as collectively, with the WCPA acting as the facilitator or coordinator of the activities.

## **VISION AND GOAL**

The RAP envisions Southeast Asia to be...a region with an effective, self-sufficient, representative system of MPAs, sustaining biodiversity and human uses, designed to adapt to local and global environmental change, managed by an empowered, responsible citizenry

The 10-year goal of RAP is: An effective, functional representative system of marine protected areas established, officially recognized at all levels by governments in SE Asia, implemented by a regional, national and/or local management authority.

## **PORTFOLIO OF PROPOSALS**

Below are the proposals submitted by the working groups at the Bangkok Workshop in May 2002. They are the results of several iterative discussions from the focused groups and were subjected to plenary discussion among the region's experts. For our current purpose, they are here given only as titles with their timeframes and indicative budgets. For more details, readers are advised to contact Ms. Rili Djohani, Director, TNC Bali Office.

### WORKING GROUP 1: Planning and Design

**Proposal 1: Establishment of SEA MPA Network Secretariat to Develop Proposals and Solicit Funding for the Implementation of Action Plan**

Timeframe: Ongoing

Indicative Budget: \$50,000 / yr

**Proposal 2: Development of information base and technical expertise to design a SEA MPA Network.**

Time frame: 2 years

Indicative Budget: \$70,000.

**Proposal 3: Development of ecological and social frameworks for MPA network in SEA (Prop 3) Identify gaps in SE Asia (Prop 1)**

Time Frame: 1.5-2 Years

Indicative Budget:\$45,000

**Proposal 4: Development and promotion of institutional framework for SEA MPA network. Identify and enlist contribution of specific MPA sites and categorize their role or function in the network**

Time frame: 2-3 years

Indicative Budget: \$130,000

**Proposal 5: Development of an implementation plan for SEA MPA Network (including scientific, management, and social aspects)**

Time frame: 2 years, simultaneous with the development of the framework.

Indicative Budget: \$150,000

**Proposal 6: Strengthening and expansion of technical capacity of SEA MPA Develop specific guidelines for specific MPAs in network**

Time Frame: 3-5 Years

Indicative Budget: \$1,000,000

### WORKING GROUP 2: Adaptive Management

**Proposal 1: Adaptive Management Training for MPA Managers**

Timeframe: 3 years

Indicative budget: US\$ 250,000

**Proposal 2: Development of rating and certification system for MPA management in Southeast Asia**

Timeframe: Three years for Phase 1 and 3 years for Phase 2

Indicative budget:

Phase I: US\$ 400,000

Phase II: US\$ 300,000

**Proposal 3: Comparative Case Studies on Adaptive Management**

Timeframe (initially, not more than 5 yrs): 2 yrs

Indicative budget: US\$150,000

**Proposal 4: Extended Cost Benefit Analysis of Tioman Island as a MPA**

Timeframe: 24 months

Indicative budget: US\$ 70,000

WORKING GROUP 3: Coordination and Enforcement**Proposal 1: Developing “Best Practices” Model for Effective Community Enforcement Legislation**

Timeframe: May 2003- February 2005

Indicative Budget: \$110,000

**Proposal 2: Assessment of MPA enforcement activities: learning lessons and producing guidelines through best practice case studies**

Timeframe: June 2002-December 2002

Indicative Budget: \$178,000

**Proposal 3: Capacity Building for MPA Enforcement from Community to Judiciary**

Timeframe: March 2003 – June 2004

Indicative Budget: \$ 290,000

WORKING GROUP 4: Community Awareness, Involvement and Development**Proposal 1: Development of a comprehensive study tour program to mobilize support for co-managed MPAs in the region.**

Time frame: (initially; not more than 5 years): 3 years

Indicative budget(s) (in US\$): **NOT PROVIDED****Proposal 2: Improvement and development of community outreach media**

Time frame: 2002 - 2005

Indicative budget: **NOT PROVIDED****Proposal 3: Conservation Concepts in Formal Education**

Timeframe: NOT PROVIDED

Indicative budget (in US\$): NOT PROVIDED

**Proposal 4: Documentation and Regional Dissemination of Processes Leading to Community Involvement and Empowerment**

Time frame (initially; not more than 5 years): 3 years

Indicative budget(s) (in US\$): 200,000 US\$

**Proposal 5: Broad Public Awareness of the benefits of broad-based MPA co-management approaches in SEA**

**Sub-proposal 1: Adaptation, Development and Distribution of General Awareness Medias of MPAs on Regional of SEA**

Time frame: 2002-2005

Indicative Budget(Us\$): NOT PROVIDED

**Sub-proposal 2: Creation and maintenance of a thematic focal point and national focal points for awareness, inv., ...**

Time frame (initially; not more than 5 years): 5 years

Indicative budget(s) (in US\$): **NOT PROVIDED**

WORKING GROUP 5: Sustainable Financing

**Proposal 1: Facilitation of sustainable tourism development and promotion for SE Asia's MPA network as a means of improving financial stability of the network.**

Time Frame: 2 years

Indicative Budget: \$730,000

**Proposal 2: Training Program on Sustainable Financing for MPAs Managers (multi year program)**

Time Frame: 2002 - 2005

Indicative Budget (Us\$): \$80,000

**Proposal 3: Desktop study/evaluation of the portfolio of available financing mechanisms for SE Asian MPAs, paying particular attention to successful SE Asian examples, constraints in SE Asia, proven legal mechanisms to retain user fees at the local level, optimal budgets for SE Asian MPAs, and evaluation of the trend towards privatization of MPAs and its applicability in the SE Asian context.**

Time frame: 1 year

Indicative Budget: \$77,000

**Proposal 4: Cost Benefit Analysis and Economic Evaluation of selected MPA in South East Asia**

Time Frame: 2003 -2004

Indicative Budget (US\$) for 5 countries: \$ 225,000

**Proposal 5: Evaluation and implementation of MPA trust funds in SE Asia.**

Time Frame: One-year

Indicative Budget: \$120,000

## **INTRODUCING THE REGIONAL ACTION PLAN**

### **VISION**

**The vision:** Southeast Asia -a region with an effective system of marine reserves, well-designed to adapt to local and global environmental change, self-sustaining due to financial stability, managed by an empowered and law-abiding citizenry.

### **BACKGROUND/CHRONOLOGY**

The WCPA-SEA-Marine Workshop (Bangkok, 9-11 May 2002) aims to develop a "Regional Action Plan to strengthen and improve the effectiveness of a network of marine reserves in Southeast Asia". The workshop is organized by the World Commission on Protected Areas (WCPA), The Nature Conservancy (TNC), and the U.S. National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service (NOS), and the World Conservation Union (IUCN). This initiative to support marine reserves (MRs), i.e. marine protected areas and/or fisheries restricted areas in Southeast Asia has four phases:

#### **Phase I: 2000 - 2001**

Launching of the WCPA-SEA Marine Working Group during the 9th International Coral Reef Symposium in Bali (Oct 2000); 40 participants from 10 countries participated in identifying the issues and constraints in relation to a network of MRs; 5 working groups were established: 1) Planning and Design, 2) Adaptive Management, 3) Coordination and Enforcement, 4) Community Awareness and Development, and 5) Sustainable Financing;

In 2001, more thought went into the development of a regional action plan for Southeast Asia and funding was secured for a focused workshop on sustainable financing of Marine reserves in the region in Bali (Nov 2001); 12 case-studies were presented from 6 countries with representatives from the government, private sector and NGOs. Recommendations for the WCPA-SEA-Marine Regional Action Plan have been made and proceedings are in press.

#### **Phase 2: 2002**

Development of the Regional Action Plan (RAP) through an e-mail dialogue among a network of marine conservation practitioners and experts. A web site for the WCPA-marine working group was established. The website also included logistical



information for the conference. This dialogue and the website will continue after the workshop.

### **Phase 3: 2003 -**

Conservation practitioners, experts and representatives of donor agencies are invited to finalize the RAP and the proposals at the workshop in Bangkok, May 9-11. The organizers will produce and distribute the RAP portfolio and seek funding opportunities for the RAP in coordination with the various lead agencies regarding the implementation of the proposed action in the regional plan;

### **Phase 4: 2003 -2012**

Implementation of the RAP and continue the strengthening of the WCPA-SEA-Marine Working group capacity in three directions:

#### ***I. Coordination and networking***

Regional Action Plan with portfolio of action oriented projects, interacting with other regional and national coastal and marine initiatives and working groups with other sectors such as tourism.

#### ***II. Information***

Updating web site and maintain Internet dialogue among the members; distribution of information among the members database of working group members: experts, practitioners, private sector, and donor members.

#### ***III. Facilitation***

Technical assistance/funding to members of the WCPA-SEA-Marine Working Group; annual events such as workshops on "The network of MPAs in Southeast Asia" that could bring together the marine working group on an annual basis; a series of thematic workshops and field exchanges in the region among others, publications and media exposure

## **FEATURES OF THE PLAN**

The Regional Action Plan (RAP) is a set of prioritized, regional-level project proposals that will improve the effectiveness of existing and proposed MPAs in Southeast Asia. These proposals are focused around 5 priority themes (see above) as identified at the 8th ICRS.

The RAP is a coherent body of information intended to coordinate and complement existing related plans of action e.g. EAS/RCU networking of coral reef MPAs. Through inputs from the network of experts and the workshop in Bangkok in May 2002, the RAP consolidates acknowledged areas of strength of member nations – individually and collectively, focused on building national and regional capacity to implement the action points. It identifies the necessary actions to address the issues of common concern, while remaining sensitive to those unique for individual member nations. It also remains flexible in meeting new challenges in the next decade.

The major output are project or programme proposals with clear and achievable future plan of action in which the implementation is phased and carried out both by individual countries themselves as well as collectively, with the WCPA acting as the facilitator or coordinator of the activities. The plan details a well-focused and coordinated approach to protecting Southeast Asia's coastal and marine environment through a system of MPAs. This will be institutionalized as an integral part of the region's development paradigm. A full realization and appreciation of the significant advancements in resource management as well as the rapidly increasing number and severity of environmental threats in the region guide the RAP. These threats to the coastal and marine heritage of Southeast Asia will be considered as an integral part of a global concern for environmental protection and sustainable resource use.

## **10-YEAR GOAL**

To strengthen an effective representative system of MPAs by building and sustaining national and regional capacity to manage the coastal and marine environments of Southeast Asia.

## **RAP OUTPUTS**

The Regional Action Plan aims to provide a coherent integrated framework of priority pragmatic activities that will advance cooperation in Southeast Asian MPAs towards a directed and purposeful manner. Guided by conservation principles, the RAP recognizes appropriate actions to develop:

1. Action oriented projects – While the plan encourages basic research, it promotes its applied extension to support national and regional priorities for environmental policy formulation, planning, management and decision-making in support of MPAs via workshops, guiding documents, pilot sites, etc.;
2. Local community participation and traditional knowledge – Promotion of local community participation and use of traditional practices in MPA management as an exercise of their rights;
3. National action – recognition of the critical role of national agencies, institutions, local governments, and NGOs in the day-to-day management of the individual and transboundary or cluster MPAs;

4. Regional coordination – An advocacy for close coordination with national governments, existing institutions and expertise in the region, to encourage cooperation with appropriate regional bodies and mechanisms to optimize existing resources;
5. International understanding – recognition of the interdependence of issues in the coastal and marine environment both within the region and among other regions of the world;
6. Sustainable financing and resource allocation – A search for adequate, long term, and sound financial base by soliciting commitments, attracting investments and allocating equitably and appropriately the resources;
7. Use of relevant information - To improve the quality and flow of information among member nations and concerned parties within nations; focus will be on sharing of indigenous and traditional knowledge on which resource management decisions and policies are based;
8. Capacity building – Building national and local capacity to protect and manage the region's coastal and marine environment via a long-term programmatic approach and at all levels and sectors such as tourism, fisheries and other marine based industries. The plan will promote the use of environmental education and training as primary capacity building tools across the range of its activities.

The RAP will draw upon cutting edge science and field experience to enhance existing criteria and methods for the selection, planning, and management of areas in ways that take global change threats and opportunities into account. It will examine experience with biological corridors and connectivity measures and the development of biodiversity-friendly land uses in landscapes/seascapes surrounding protected areas. Experience with transboundary-protected areas (areas shared between two or more countries) will also be reviewed in the context of the development of a WCPA “Parks for Peace” Initiative. This will examine the contribution of such areas to enhanced biodiversity conservation as well as enhanced regional co-operation and partnership.

## THE REGIONAL ACTION PLAN

This section provides background information on each of the five themes, namely, *Planning and Design*, *Adaptive Management*, *Coordination and Enforcement*, *Community Awareness and Development*, and *Sustainable Financing*. They include key questions, and potential (general) topics to facilitate and guide participants in formulating projects or programs proposals. This information will be directly useful in helping them determine what specific actions and needs in the region with respect to each theme.

### THEME 1: PLANNING AND DESIGN

#### Background/Rationale

MPA planning and design is a process that leads to robust results (recommendations, models, tools, guidelines, approaches, etc) for an ecologically sound, socially responsible and economically viable system of MPAs.

Planning, design, and management processes are interactive and interdependent. The planning/design/management process as presented here aims to address marine conservation issues through a synthesis of all relevant factors. This application of the systems approach involves consideration of the presence and effects of local domestic uses, tourism, other industries, urbanization, and offshore uses, in addition to conservation objectives, and economic and political factors. The approach seeks to make national and regional efforts comparable and compatible.

#### Eco-regional planning

The rationale for developing a network of marine reserves in Southeast Asia stems basically from the need to divide the region into structural and functional ‘groupings’, ‘eco-regions’, or bioecoregions’. This is gaining justification from scientific findings on ‘sources and sinks’ at different scales in order to maximize fish harvest benefits, population genetic studies of corals and fish, and from the need to reduce the tension over transboundary conflicts e.g. Spratlys.

The objectives of the planning and design process include:

- To come up with a well-designed system of reserves in SE Asia;
- To develop capacity and awareness of partners to identify, design, implement and manage MPAs;
- To identify process(es) of developing a network that meets objectives (e.g. participatory, scientific, etc.);
- To develop tools and information base for design and management;
- To address short-term poverty alleviation/benefits while the system develops and leads to longer term benefits;
- To design and plan for ecological objectives, understanding that the process will require social approaches.

**ISSUES:**

- ?? Lack of dissemination of information
- ?? Limited oceanographic information base
- ?? Spawning sites not included
- ?? Needs for research: oceanographic information, currents for spawning
- ?? Careful to be realistic to public, as populations of fish take decades to recover
- ?? Need not to compromise the ecological principle while accommodating public uses of resources

**Key Question**

What are the specific initiatives that will enhance regional and in-country capabilities to effectively:

- a. Conduct applied research to support the planning and design of MPAs?
- b. Assess resilience of reserves to survive, connectivity of MPAs, critical breeding sites, etc. and how these translate into size and shape of a reserve?
- c. What are the specific interventions that will ensure that research and institutional strengthening initiatives to improve MPAs in SE Asia continue in a directed and purposeful manner? (Will eco-regionalization of the region's marine environment help?)

**Potential Topics For Proposals**

- a. Assessment and gap analysis of data (ecological and institutional) needed to design a representative system of MPAs, resulting in a proposal for compiling inventories identified by the gaps.
- b. Develop a program for capacity building of prospective planners and designers by ID Centers of Excellence, arrange cross-visits and trainings, production and training on guides and best practices, etc.
- c. Design workshops: what does a MPA network look like? What combination of characteristics? Are the guidelines dif for large or small scale? For different objectives? (Ecol and Organizational and Process)
- d. DNA studies to determine extent of populations of critical species / resources.
- e. To develop the human capacity (and facility) to conduct these DNA studies.
- f. Create a social marketing program that builds awareness, political will and institutions arrangements to eliminate impediments and create forward momentum for regional network of MPAs.
- g. A regional whale sanctuary program (migratory species) as a pilot for developing regional MPA programs, building models and charismatic species.
- h. Science questions? Process to acquire/build the scientific information/research from the region to the global agenda. Sea mounts, deep waters, connections, etc.)

- i. Nearshore-Offshore (benthic-pelagic) coupling as a basis for planning, design and management of a marine reserve network in Southeast Asia;
- j. Habitat mapping of marine reserves in Southeast Asia;
- k. Spillover effects of marine reserves: biophysical, sociocultural, economic and institutional implications;
- l. Marine World Heritage sites as core zones of marine reserves in Southeast Asia;
- m. Developing cooperation among multiple jurisdictions and political boundaries affecting marine reserves;
- n. Design and establishment of a regionally representative system of marine reserves in Southeast Asia.

### **Suggested Specific Actions**

From earlier records, the following actions that bear on planning and design of MPAs were recommended. While some have focused on actions on the ground, the others still need to be broken down into more specific action-oriented components:

From the Sabah workshop (October 2001):

- 1. To review country inventories of MPAs;
- 2. To put together a digitized map of coral reefs and MPAs in the East Asian Seas region (scale; 1:100,000);
- 3. To identify the MPAs for networking according to the CAR (comprehensiveness, Adequacy and Representativeness) principles;
- 4. To clarify strategic goals and develop strategic objectives;
- 5. To develop operational objectives to achieve the strategic goals of a network of MPAs in the East Asian Seas Region;
- 6. To undertake 'performance evaluation' to assess the effectiveness of the network of MPAs.

From the review made by Alino et al. 2000:

- 1. To utilize Integrated Coastal Management philosophy in MPA framework;
- 2. To improve regulatory and non-regulatory mechanisms for sustainable use in multiple use MPAs
- 3. To learn from MPA success stories;
- 4. To establish more functional network of representative MPAs;

At the 9th International Coral Reef Symposium (ICRS) in Bali, Indonesia, participants identified three priority actions for Southeast Asia with respect to MPA planning and design. Most important was a comprehensive regional assessment to determine site locations for no-take MPAs that would support sustainable fisheries. Participants suggested that this could be done through a workshop of regional experts and

an interdisciplinary review of existing data. Second, workshop participants proposed development of a regional inventory of information on MPAs and management effectiveness. Third, participants suggested that preparation and dissemination of practical guidelines for the design of no-take MPAs was a regional priority. Other regional actions identified by participants included lobbying, research on MPA design, and research on ecological connectivity.

## **THEME 2: ADAPTIVE MANAGEMENT**

### **Background/Rationale**

Adaptive management is a dynamic process, socially, politically and culturally acceptable, improving iteratively in response to internal and external changes, anticipatory, proactive and opportunistic, conscious of trends (i.e. monitoring), without compromising basic conservation objectives.

A high degree of linkage between coastal and marine environments exists in Southeast Asia.. In addition these areas exhibit structural and functional connections to terrestrial habitats and activities and impacts. Hence, they impose an urgent need for integration of protected area management and overall conservation strategy. These and other newly emerging threats and challenges in marine reserves require an adaptive management approach that can deal with issues and constraints immediately and effectively. The primary objective of embracing the adaptive management philosophy is thus to provide innovative but practical models that will accommodate new and emerging threats to the region's marine reserves.

The intricately linked nature of Southeast Asia's ecosystems and its transboundary socioeconomic and resource issues warrant an ecosystem approach to establishing marine reserves. A coherent and coordinated approach to manage a representative system of these reserves may offer an effective means for promoting the sustainable use and conservation of regionally significant marine resources as opposed to ad hoc or reactive methods of marine management. This, however, can only be achieved by the creation of integrated management regimes, which deal with all human activities and their impacts on the resources. These regimes will consist either of general regulation of these activities and impacts affecting the marine environment supplemented by the provision of special protection for particular areas, or of the creation of a much larger marine reserve with levels of protection varying within it according to an established zoning scheme.

Adaptive management includes the ability to monitor indicators and being receptive to changes in the biophysical, socioeconomic, institutional, and political environment. It also includes monitoring trends in local, national, regional and global economies (e.g. tourism trends), forecasting trends in markets, capturing option values of the resource (e.g. future benefits from innovative techniques, technologies.) and constantly linking the science of biodiversity conservation to the benefits received. This requires managers to constantly be looking beyond the boundaries of the MPA or network of MPAs, employing dynamic approaches to management and seizing opportunities as they arise.

### **“Conservation by design”**

‘Conservation by design’ is a framework developed by The Nature Conservancy (TNC) to align the most effective conservation actions to achieve tangible, lasting results at different scales. A similar approach can be used for the RAP: It sets forth:

1. A clear, concise vision;
2. Ambitious goals for the year 2010 to make the necessary progress towards fulfilling this vision;
3. An overview of integrated approach for achieving these goals;
4. An outline of measures used to monitor organizational progress; and
5. A description of the unique values that characterize the ASEAN region and WCPA-SEA-Marine Working Group.

### ***Core concepts***

Eco-regions, not political boundaries, provide a framework for capturing ecological and genetic variation in bio-diversity across a full range of environmental gradients. Functional conservation areas conserve the local species, natural communities, and ecological systems and the ecological processes necessary to sustain them over the long term. Conservation areas range along a continuum of complexity and scale from landscapes that seek to conserve a large number of conservation targets at multiple spatial scales, to sites that seek to conserve a small number of conservation targets. To conserve wide-ranging and migratory species, conservation areas and across portfolios should be designed as integrated networks.

### **World Heritage Sites: Issues relevant to MPA management**

The planning, design, and management of coastal and marine Natural World Heritage Sites in Southeast Asia revealed a number of challenges that RAP considers. These are:

1. The imbalance in the number of terrestrial and marine WHS, with the latter overwhelmingly outnumbered by the former;
2. With it comes the imbalance between the attention (hence, resources) given, more to the terrestrial, than to the coastal and marine;
3. The imbalance between site inscription and site management, the latter seriously neglected;
4. The importance to be attached to monitoring and evaluation, which is relatively poorly funded and supported, hence, neglected in the region;
5. The evidence of mounting threats to many natural WHS with marine areas;
6. The need to work with people; and
7. Emphasis on capacity building.

The foregoing evidences indicate that a number of agencies and institutions with programs related to conservation and management of coastal and marine resources are



facing similar or related problems. In Southeast Asia where resources are extremely limited, these agencies are well advised to pool their resources, focus attention to what they do best, complementing initiatives of others. It is well-known, for example, that in the case of the region's fisheries, the industry has been dwindling since the '80s but fishery agencies have been reluctant to accept this fact. This is because agencies mandated to provide the required and reliable information are not well informed and not well coordinated with each other. Fish stocks are rapidly disappearing, so that what is needed is the use of data and information that currently exist, adapting them to suit immediate management needs. There is no prudence in waiting for the right amount and quality of scientific data as essential in the management process: do with what we have, but gather more and the needed data as we move on in the process. In the case of fisheries, the waiting game is causing the ultimate loss of such an important source of income and livelihood for millions of people in the region.

### **Key Question**

A key question relevant to the theme is: How can management of MPAs accommodate emerging new threats, arrival of new stakeholders, and encroachment?

### **Potential Topics for Proposals**

- a. Analysis of legal, institutional, political, cultural context for adaptive management of MPA
- b. Monitoring benefits to local communities within the context of a MPA
- c. Monitoring effectiveness of zoning and regulations of MPAs
- d. Conducting proper cost benefit analysis of MPA and other techniques/tools (Tioman Island, Malaysia)
- e. Making available guidebooks specific for CBA MPA evaluation and other techniques/tools in each of the regional languages, appropriate to the level of the audience
- f. Develop local, national and regional MPA rating and certification
- g. Training course in adaptive MPA management for actual park managers
- h. Feasibility studies on alternative income generating activities within the context of a MPA
- i. Study of compensation schemes for loss of income related to MPA establishment
- j. Involvement and or exposure of local district officials, school children and other stakeholders to the local MPA
- k. Case studies of existing and effective MPAs (Matang Mangroves, Olongo Island, Komodo, Blongko, Pulau Payar, St Paul's Subterranean River Nat. Park, WHS)
- l. Exchanges of experiences
- m. Development and adaptive management of a marine reserve network in SE Asia;
- n. Coral reef-seagrass bed-mangroves interconnectivity in marine reserves;

- o. The Spratlys as a Peace Park: the concept of marine protected area at work;
- p. Is a 'turn-key' model for marine reserves possible for Southeast Asia?
- q. Science behind indigenous knowledge in managing marine reserves;
- r. Reversing critical habitat fragmentation and destruction in Southeast Asian marine reserves;
- s. Filling gaps in baseline data and ecological knowledge useful in marine reserve management in Southeast Asia.

### **Suggested Specific Actions**

From experts' reviews of the status of MPA management in ASEAN, the following relevant recommendations were made (some are common to the other themes):

From the Sabah workshop (October 2001):

1. To review country inventories of MPAs;
2. To put together a digitized map of coral reefs and MPAs in the East Asian Seas region (scale; 1:100,000);
3. To clarify strategic goals and develop strategic objectives;
4. To develop operational objectives to achieve the strategic goals of a network of MPAs in the East Asian Seas Region;

From the review made by Alino et al. 2000:

1. To utilize Integrated Coastal Management philosophy in MPA framework;
2. To improve regulatory and non-regulatory mechanisms for sustainable use in multiple use MPAs
3. To learn from MPA success stories;
4. To highlight and utilize scientific inputs for the adaptive management of MPAs.

With respect to the theme Adaptive Management, workshop participants at the 9th International Coral Reef Symposium (ICRS) in Bali, Indonesia, identified several regional priorities. The development of pilot projects, general training workshops, and a workshop on performance indicators and analysis were identified as the major priorities for furthering adaptive management in the region. Other possible regional actions included the development of an adaptive management "report card" for individual MPAs in the region, cross-site visits, formation of an advisory committee of scientific and practitioner experts, and dissemination of adaptive management "success stories" throughout the region.

### **THEME 3: COORDINATION AND ENFORCEMENT**

#### **Background/Rationale**

In their effort to conserve coastal and marine resources, countries in Southeast Asia are confronted with the problem of none coordination among agencies mandated to uphold the law. A much bigger problem is the enforcement of legislation. They realize that the appropriate approach to developing law for conservation, management and protection of marine resources can only be determined by those with a detailed understanding of the culture, tradition and legal processes that exist in their countries. They agree and accept that cross-sectoral coordination in the coastal zone is critical for successful implementation of management and enforcement of rules in MPAs. Overlapping jurisdictions and unclear mandates hamper effective management.

There is an urgent need to promulgate more effective legislation and review existing ones. In the process, however, there are general guidelines, which should be carefully considered. Coordination of planning and management, by all agencies with responsibilities within marine reserves, must be provided within the legislation. Provision should be made to define the relative precedence of the various pieces of legislation, which may apply to such areas. Because of the interconnectedness of species and habitats in marine ecosystems, the legislation should provide for control within protected areas over all marine and estuarine resources of flora, fauna, terrain and overlying water and air. To be effective, legislation must provide adequate enforcement powers and duties. These should include: effective penalties for breach of regulations; incentives for self-enforcement of rules and regulations by users; adequate powers for professional field staff to take effective enforcement action, including pursuit, apprehension, identification, gathering of evidence, confiscation of equipment and evidence and laying charges in courts of law; and provisions, where feasible, for local people to reinforce or provide enforcement. This is especially practicable when the local people can continue with their traditional uses of a marine reserve, even if limitations on that use have to be applied.

Hence, it is the primary objective of the working group in Coordination and Enforcement to develop innovative practical models that will engage more stakeholders towards better coordination and enforcement of laws in support of MPAs.

#### **Legal Mechanisms Applicable to MPAs in Southeast Asia**

A growing number of international conventions, agreements, and other legal instruments focusing on the conservation of marine environments have applicability to the seas of Southeast Asia. Many of these call for the development of MPAs, while others provide a framework for their future establishment.

These mechanisms include: International Agreements, regional agreements, and bilateral agreements. Some of these International agreements are: United Nations Conference on the Law of the Sea (UNCLOS), United Nations Environment Program (UNEP) Regional Seas Conventions, Convention on Biological Diversity (CBD), UNESCO Man and Biosphere Programme (MAB), Ramsar Convention, Marpol 73/78, World Heritage Convention, and UN Agreement on Straddling Fish Stocks.

To mention a few agreements that have bound commitment from member countries in the region, we have the recent RCU-EAS-UNEP Project “*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*”. Within the project, Specialized Executing Agencies for coral reefs, seagrass beds, mangroves, wetlands, land-based pollution, and fisheries will be tapped for regional decisions on the protection and management of these habitats and resources.

In the ASEAN all member nations have representatives to the Marine Protected Areas Working Group of the association. Australia, Brunei daru Salam, Malaysia, and Singapore are signatories to the Langkawi Declaration with other members of the commonwealth governments of the United Kingdom, which resolved to protect the environment.

In general, international law, its conventions and agreements applicable to Southeast Asia does not offer strong options for establishing MPAs within the territorial seas. While international law lays out general principles for countries to follow, it often lacks the legislation and enforcement powers to actually create protective measures within marine environments. Not only are these laws generally non-binding, but many of the available conventions, such as the CBD and the UNCLOS have yet to be ratified by the US and therefore may be less relevant. International agreements usually rely upon the use of available legal mechanisms within participating nation-states. The over-harvesting of living marine resources is a central consideration for a MPAs program that must receive attention. In general, the region has yet to clearly define the role of MPAs in achieving its stated measurable objectives and strategies. In addition, it has no regulatory authority, but instead must rely on the cooperation of its 15 members to implement and enforce available legislation.

One problem we deal with regards coordination and enforcement is jurisdictional issues. In the case of the Philippines, there are many laws as well as regulatory agencies whose mandate deal with or affect, among others, MPAs. It would be worthwhile to look into some initiatives or attempts in addressing such jurisdictional problems.

Seeking policy reform has been done in many cases to harmonize or integrate these various laws and streamline the functions of various agencies. This process, however, takes time and is affected largely by the government bureaucracy. It would be interesting to see what creative ways or measures have been taken to address these jurisdictional problems other than policy reform.

On enforcement, it would be important to mention community groups and non-government organizations have undertaken direct actions in cases where government support and political will is lacking. Barangay or village officials or fisherfolk leaders and members have conducted their own patrolling and monitoring, filing of cases and imposing administrative sanctions in several instances. The challenge here is how to sustain these initiatives.

## Key Questions

1. How can we enhance regional and in-country coordination and enforcement in support of marine reserves and abatement of key destructive fishing practices?

2. How can we engage more stakeholders, local communities, tour operators in enforcement?
3. How do we develop innovative practical coordination and enforcement models for marine reserves?
4. What are the training needs for improved coordination and enforcement of laws in marine reserves?
5. How do we sustain laudable actions of community groups and NGOs in support of coordination and enforcement of laws in marine reserves?

### **Key issues**

- ?? Conflicting national laws.
- ?? Jurisdictional conflicts (who owns the area / has the rights to use the areas resources? Who is responsible for managing the area?)
- ?? Traditional / customary laws conflicting with national and international laws
- ?? Lack of capacity:
  - ?? Conflicting perceptions and level of knowledge about laws (e.g applying local laws over International laws through misunderstanding or non awareness of the existence of international laws).
  - ?? Lack of education and information dissemination
  - ?? Lack of resources for enforcement
- ?? Corruption and nepotism
- ?? Absence of community incentives (and inadequate disincentives).

### **Potential Topics for Proposals**

- a. Regional education and exchange programs on law enforcement
- b. Monitoring and documentation to identify successful enforcement initiatives.
- c. Institutionalize a forum for exchange of issues, problems and success stories with law enforcement, using existing regional mechanisms (i.e, formalize a network).
  - a. e.g, internet dialogue such as quarterly reports about management issues and problems from each country.
  - b. Another possibility is a yearly workshop, supported by relevant management agencies in each country, with a roving secretariat.
- d. Testing model guidelines for protection and law enforcement legislation.
  - a. E.g Consultant to find information on legislation for each country (ie, many non cohesive bits of policy). Give these to a lawyer, who will collate and recommend guidelines for effective and cohesive legislation to the countries and assist them with implementation of this as necessary. These should be timed with key development initiatives within each country.
- e. Education / training of government and policy makers, which will lead them to allocate resources to invest in enforcement. This capacity should be eventually be built at community level (NOTE: for Attn. of community awareness WG)

- f. Mobilization and active involvement of local communities in enforcement of legislation, backed up by a solid legal basis.
- g. Testing a model for local legislation on administrative sanctions (eg faster swifter sanction such as confiscation of nets and boats).
- h. Testing a model through implementation at a pilot site for ‘community and management incentives’ – Where local communities are rewarded for enforcement, and managers are recognized for their hard work and significant achievements. Private stakeholders should also be recognized and rewarded (e.g tourist operators being recognized as being good environmental ‘citizens’) (NOTE: for Attn. of Sustainable Financing WG).
- i. Best practice tourism operations in MPA’s. e.g:
- j. Refine existing criteria/guidelines to pilot best practice tourism operations at a test site.
- k. Accreditation schemes by appropriate organization (eg UNEP, ASEAN or IUCN) for best practice tour operators and rewards for the best operators, monitored by an independent authority.
- l. Effective punishments for bad tourism practices (eg fines or de-accreditation for waste dumping).
- m. Developing indicators of effectiveness in coordinating and enforcing laws in Southeast Asian marine reserves;
- n. Management of unsustainable fishing practices in marine reserves;
- o. Managing political and institutional obstacles to coordination and enforcement of laws in marine reserves
- p. Managing the impacts of boaters and recreational fishers in marine reserves;
- q. Making legal frameworks effective for dealing with issues on transboundary marine reserves in Southeast Asia;
- r. Enhancing existing institutional structures and programs to promote regional cooperation in managing a network of marine reserves in Southeast Asia.

### **Suggested Specific Actions**

From two recent regional initiatives, the following actions that bear directly or indirectly on the theme Coordination and Enforcement are reiterated below:

From the Sabah workshop (October 2001):

- 1. To review country inventories of MPAs;
- 2. To identify the MPAs for networking according to the CAR (Comprehensiveness, Adequacy and Representativeness) principles;
- 3. To clarify strategic goals and develop strategic objectives;
- 4. To develop operational objectives to achieve the strategic goals of a network of MPAs in the East Asian Seas Region;

5. To undertake 'performance evaluation' to assess the effectiveness of the network of MPAs.

From the review made by Alino et al. 2000:

1. To utilize Integrated Coastal Management philosophy in MPA framework;
2. To improve regulatory and non-regulatory mechanisms for sustainable use in multiple use MPAs;
3. To learn from MPA success stories;
4. To establish more functional network of representative MPAs.

With respect to coordination and enforcement, workshop participants at the 9<sup>th</sup> International coral Reef symposium in Bali, Indonesia (2000) identified three priority actions. The greatest single need identified was the development of model legislation and policy frameworks for decentralization of enforcement. Staff exchanges (e.g., rangers, managers, etc.) and broad-based education and training workshops were also identified as regional priorities. Workshop participants also noted the need to promote the ASEAN agreement on nature conservation and to develop model legal, policy, and management protocols to overcome constraints at regional and national levels.

It is worthwhile to mention other modalities, which improved the effectiveness of coordination and enforcement of laws among users of marine reserves. These include:

#### *Developing an agenda for the users of marine reserves*

The users of marine reserves should embark on a step-by-step journey towards the eventual acceptance of certain principles and compliance to guidelines for the sustainable use of the reserves. The initial components of this agenda include:

1. A joint declaration by all the major users that:
  - ?? They explicitly recognize that intensive and extensive extraction of resources in reserves are inappropriate in some rare, fragile and unique ecosystems, (i.e. that they recognize the validity of the "no-take" concept),
  - ?? They recognize that World Heritage sites have outstanding universal value and are only inscribed on the World Heritage list after a critical process to determine their qualities,
  - ?? They recognize that the existence of marine reserves creates a special "duty of care" on the part of all stakeholders,
2. A mutual acceptance by stakeholders for the programme of work that parties will enter into as their part of the agenda;
3. Mutual support (including some financial assistance) by the users for the co-operative programme of work;
4. Participation by the mining sector in the World Parks Congress (September 2003) (WPC), including sponsorship of a workshop(s) on mining and protected areas.

### Developing an agenda for the conservation community

The conservation community in general, and IUCN in particular, is called upon to adopt an action plan to strengthen confidence in the application of the categories system. While this will take several years to implement, (and indeed may never be "complete", as it involves a continuing process of refinement), there is need to state unequivocally the direction in which the protected areas categories system is intended to evolve.

### Embarking on cooperative tasks by the users of MPAs

While the foregoing sets of action could eventually lead to the building of confidence between the two sectors, it is perfectly possible for the users and conservation interests (notably through IUCN) to embark upon a short-term programme of co-operative action. This would:

- ?? Produce helpful materials to address vexed problems,
- ?? Help to build trust further, and
- ?? Provide the foundation for more far-reaching co-operation over the medium term as the first two elements of the trust building agenda begin to deliver results.

### Considering activities external to MPAs

Because of the linkages between marine environments and between marine and terrestrial environments it is important that legislation include provisions for the control of activities which occur outside an MPA which may adversely affect features, natural resources or activities within the area. Often, low or high watermarks constitute a jurisdictional boundary.

Other boundaries exist between MPAs and adjacent marine areas. A collaborative and interactive approach between the governments or agencies with adjacent jurisdictions is essential. The ideal is to have integration of objectives and approaches within a formal system of coastal zone management within each country, with collaboration between countries.

## **THEME 4: COMMUNITY AWARENESS, DEVELOPMENT AND INVOLVEMENT**

### **Background/Rationale**

The RAP is dedicated to understanding and learning-by-doing around concrete attempts to enhance equity in conservation via campaigns in community awareness and development. It builds upon previous works, which bring to bear expertise and concerns towards specific initiatives around geographically, and thematically coherent objectives. The resulting lessons will be developed, articulated and diffused to ensure that approaches and relationships around marine reserve stakeholders in the 21st Century—



with particular focus on local communities—will be much more equitable and sustainable than in the past.

When communities are fully part of the design, planning and implementation processes, they become empowered and also share the perceptions of results based on monitoring and evaluation, which then reinforces their support for the sanctuary regimes. Building interconnectivity will then come as more local governments and communities see the benefits but this is not trivial since the hierarchy of government tends to break down in planning and implementing such regimes.

In THEME 4 (EQUITY AND PEOPLE) of its Strategic Plan for 2001-2004, WCPA recognizes that successful management of protected areas requires the support and involvement of local people. Local communities must be effectively involved in the planning and implementation of protected areas.

WCPA advocates approaches to protected area management, which involve working for, with and through local communities, not against them. This theme program will distil experience and best practice from relationships between people and protected areas. Particular focus will be given to the equitable sharing of benefits arising from protected areas with local communities. New experience in co-management and community managed protected areas will also be analyzed and experience distilled and distributed. This goal is in line with THEME 5 (DEVELOPING MANAGEMENT CAPACITY) of WCPA.

Commitment of local constituency is critical for the success of a network of marine reserves. A key vehicle is to integrate sustainable development projects with community awareness programs on the economic benefits of marine reserves. This will enhance stakeholder involvement, public education and communication for social change.

Members of coastal communities are definitely NOT ignorant about (for example) the environmental destruction caused by blast fishing. They weigh what they recognize as disadvantages against what they recognize as advantages and make a conscious decision to continue the practice. What is needed is not awareness of environmental issues, but training in alternative practices or means of livelihood, increased knowledge of long-term benefits of resource management, increased support from legal and law enforcement agencies, and so on.

Communication for social change encompasses the steps to behavior change at the individual and community levels as well as an even wider range of communication activities involving lobbying legislators and opinion leaders for legal and policy change, in-school educational programs, skills training for fishermen, farmers, and other users of coastal resources, media advocacy for news coverage of coastal issues, and so on.

There is an urgent need to develop strategic communication strategies in support of a network of MPAs in the region. The strategies should focus on:

1. The role and functions of marine protected areas;
2. The economic links between MPAs and the livelihood of coastal communities;  
and
3. The importance of no-take zones/reserves for the recovery and development of sustainable fisheries.

Field information and conservation science should be integrated into messages and materials which are tailor-made to the various target groups. Community awareness and development programs are very interrelated; alternative livelihood programs that steer away communities from using destructive fishing practices are among the best vehicles to promote MPA awareness programs. For example the development of a fishery for large coastal pelagic fish, aiming for income levels competitive to other non-destructive small-scale fisheries. Such projects can build close working relationships with local communities.

### **Target groups**

Community awareness programs supporting marine reserves could target the following groups, building upon their pride, sense of ownership and participation in the management of the MPA:

1. Government - Government programs can emphasize the planning and management tools available for MPAs including spatial planning (zoning plans), participatory mapping, laws and regulations;
2. Inter-government /private sector - Their programs can promote a network of MPAs in the region;
3. Dive/tour operators - Their programs can focus on the concept of carry capacity of eco-systems for tourism activities and code of conduct in MPAs;
4. Media - Programs aired by media can provide strategic and systemic information on MPA networks, highlights and challenges;
5. Local NGOs - Their programs can blend with marine conservation skills with community organizing and development expertise;
6. Universities - Their academic programs can help facilitate field studies for graduate students in MPAs.

### **Methodology**

The process of effecting communication for social change includes:

1. Development of an effective MPA outreach team and program focusing on the appreciation of marine biodiversity, the urgency of threats, the need for conservation and management, and the role of marine protected areas;
2. Socialization of all aspects of the management plans, including short-, medium- and long-term plans, including zoning plan and detailed regulations;
3. Development of the necessary awareness and outreach materials (see examples);
4. Development and socialization of a framework to reduce population pressures toward the park resources, including migration regulations;
5. Building a strong local constituency for the management of MPA; and
6. Development of a monitoring protocol to measure the success of above program.

### **Anticipated results and outputs**

1. Awareness program developed and implemented, building on results of Participatory Rural Appraisals and on Site Conservation Planning consultations, leading to an enhanced understanding and appreciation of biodiversity and conservation among local communities;
2. Capacity increased among key stakeholders to understand and support protected area management and control of destructive fishing practices;
3. A dissemination strategy on MPA zoning and regulations implemented, leading to increased understanding of MPA zoning and regulations with local communities and other stakeholders;
4. A training workshop implemented on Park zoning and regulations for participants like park rangers, managers, fisheries or enforcement agencies, NGOs, community groups, the media and the marine tourism industry;
5. A system developed and implemented to monitor and measure the success of the community outreach, awareness and education activities; and
6. Conservation awareness materials developed and disseminated.

### **Key questions**

1. What are the arrangements that will ensure that RAP enhances stakeholder involvement, public education and awareness building programs?
2. How can we effectively build the local constituency, commitment and pride for marine reserves?
3. How can we integrate sustainable awareness and community development projects effectively to both steer away communities from destructive practices and build up their support and engagement in the management of protected areas?

### **Potential topics for proposals**

- a. Experience transfer via study tours
  - Review of community-based MPAs in the region – report on lessons learned
  - Study tours (regional) for community leaders from inexperienced to experienced sites (e.g. Vietnam to Philippines, where many examples exist, etc.)
  - Cost-effective alternative to study tours: development/improvement of media to increase community awareness in order to lead to social change:
    - i. Assess key points conveyed in study tours
    - ii. Put those in media materials (video, leaflets, etc.)
    - iii. Assess impact on social change of media relative to study tours
- b. Community outreach media
  - Assessment of effectiveness of outreach media (e.g. videos vs. posters, radio, books, etc..) as methods to raise awareness to initiate behavioral change

- Training modules for managers, including community leaders, NGO facilitators and involved government officials, on communication approaches
  - Promotion of successful community involvement MPA case studies through media campaigns and products
  - Promotion of creative and innovative mechanisms for communication among stakeholders (e.g. local radio stations for remote areas)
  - Adaptation of existing local school curricula regarding functions and values of MPAs
- c. Community development projects
- Training workshops on alternative income sources/sustainable income generation, such as post-harvesting 'product preservation' and 'product enhancement'
  - Handbooks/manuals on alternative income sources with examples such as ecotourism, aquaculture, handicrafts, post-harvesting product preservation and enhancement
  - Study (or review of studies) regarding behavioral change – Who changed? Why? What are the keys to invoking change?
    - i. Evaluation of 'peer pressure'
    - ii. Evaluation of 'ownership' models as a key incentive for change
- d. Broader public awareness
- Adaptation and development of regional TV ads regarding values of MRs
  - Adaptation and distribution of existing movies, media to region
- e. Sharing effective conservation approaches (best practices) in MPAs in SE Asia;
- f. Developing MPAs to work for people;
- g. Involving users in developing legislation for MPAs;
- h. Education as a means to ensure stakeholder commitment in managing MPAs
- i. Public education on the value of MPAs;
- j. Establishing strong lines of communication between managers, scientists and users of MPAs;
- k. Development of a decentralized structure and a high level of community involvement in managing MPAs.

### **Examples of awareness materials**

Package of specific conservation awareness and education materials in support of a MPA zoning plan can include:

1. An information leaflet on MPA zoning and regulations, which contains the same information as a zoning poster;
2. A flipchart which is a simplified version of the above poster/leaflet combination, but which is designed specifically for the local fishing communities. The Flipchart/leaflet combination contains all but not more than the necessary information on zoning and regulations and it is highly accessible, readable and attractive for the local public. This combination takes into account the realities of

the local situation, such as the fact that local people are not used to reading maps or charts. This means the flipchart/leaflet will have to work with other types of explanations (in addition to the map), drawings, cross sections of reefs explaining specific zones such as the “marine zone”, etc. Also this combination will have to explain things in terms of locally available skills in navigation and positioning. For example, the location of a border needs to be explained in terms of a cross-bearing with Islands or other land-marks (just like the fishers do!) rather than just with a map and GPS coordinates.

3. A billboard map of the MPA, which can be established at public places, i.e. elementary schools, meeting rooms, etc., on the islands in the MPA. The map can show the islands, highlight the zoning system, spawning sites, dive sites, special reefs, manta ray aggregations, mangrove forests, etc. Every Day, members of the conservation cadres / teachers etc. can spend some time in front of the map explaining specific events / issues / conservation efforts in support of the MPA. For example, a grouper spawning aggregation, a coral monitoring activity, a case of illegal fishing, the launch of a fish culture project, etc. The lecture / presentation / informal gathering can be supported by photos that can be stuck on the map or circulated among the audience. A manual should be developed, including specific modules that can be developed for these 'billboard' presentations.
4. A “Zoning and Regulations Game” that can be played in the villages. Again, a map of the MPA as the playing board and 6 players representing different stakeholders in the MPA, for example Park's authority, fish bombers, dive operators, NGO, Pemda and Adat leaders. All players have specific objectives, but the winner of the game is the one who can best align his/her specific objectives to the overall management goals of the Park.

### **Suggested specific actions**

From two recent regional initiatives that attempted to assess the status of MPA management in Southeast Asia, the following actions that bear on the theme Community Awareness and Development were recommended:

From the Sabah workshop (October 2001):

1. To review country inventories of MPAs;
2. To put together a digitized map of coral reefs and MPAs in the East Asian Seas region (scale; 1:100,000);
3. To identify the MPAs for networking according to the CAR (comprehensiveness, Adequacy and Representativeness) principles;
4. To clarify strategic goals and develop strategic objectives;
5. To develop operational objectives to achieve the strategic goals of a network of MPAs in the East Asian Seas Region.

From the review made by Alino et al. 2000:

1. Utilize Integrated Coastal Management philosophy in MPA framework;
2. Improve regulatory and non-regulatory mechanisms for sustainable use in multiple use MPAs;
3. Learn from MPA success stories;
4. Establish more functional network of representative MPAs.

Workshop participants at the 9<sup>th</sup> International Coral Reef Symposium in Bali, Indonesia (2000) identified four priority actions to enhance community participation in MPA development and management in Southeast Asia. Participants identified training in community-based management, including facilitation training, as the single greatest priority. Research into renewable resource use and the development of alternative livelihoods, gender sensitive training for resource users and managers in integrated coastal management, and broad-based environmental education materials were also deemed priority actions at the regional level.

## **THEME 5: SUSTAINABLE FINANCING**

### **Background/Rationale**

Traditionally, protected areas have been managed by government agencies and have thus tended to rely almost exclusively on government coffers. In some places, however, these arrangements are changing. New models are emerging, such as protected areas parastatals in Africa, private protected areas in Southern Africa and elsewhere, NGO-managed protected areas especially in Latin America, and the growing band of volunteers assisting with protected areas management in Australia. Such new institutional arrangements may provide greater flexibility and be more innovative in securing financial resources from public and private sources.

Protected areas in developing countries receive an average of less than 30 percent of the funding that is necessary for basic conservation management (James et al., 1999). Over the past decade, many developing country governments (particularly in Africa) have cut their budgets for protected areas by more than 50 percent as a result of financial and political crises (Dublin et al., 1995). International aid for biodiversity conservation has been declining ever since the 1992 Earth Summit in Rio de Janeiro (James et al., 1999). Many protected areas in developing countries have become mere “paper parks” lacking sufficient funds to pay for staff salaries, patrol vehicles, or wildlife conservation programs.

All the various ways of financing protected areas fall under three basic categories. None of these ways of raising revenues is a panacea. Most protected areas in developing countries will need to rely on a combination of all these sources:

:

1. Annual budget allocations from a government's general revenues;
2. Grants and donations from individuals, corporations, foundations, and international donor agencies. This category includes debt-for-nature swaps and conservation trust funds; and
3. User fees, conservation taxes, fines, and other revenues that are earmarked for funding protected areas.

Effective management through financing mechanisms entails at least two essential ingredients. These include developing a sense of ownership over the resource and products and livelihood alternatives that support marine conservation.

A very important positive incentive for marine conservation is giving individuals or groups clear responsibility for the resources they exploit. This involves putting in place a mechanism that enables them to benefit from marine conservation or to personally bear the costs associated with degradation. Local coastal communities whose livelihoods have been displaced or whose productive opportunities have been reduced as a result of a marine protected area may benefit from the development of new products and markets that support marine conservation. Such new markets can provide good incentives for supporting conservation. For example, in St. Lucia, many of the fishers whose livelihoods were being affected by decreased catch (due to the degrading fishery), and subsequently the enforcement of no-take areas, were able to switch to becoming boat taxis or guides for tourists, providing them with more stable and in many cases, higher income (Callum Roberts, pers. comm.).

### **Building a New Conservation Financing Paradigm**

The current general situation in financing marine reserves can be described by the following:

1. Government finances for the management of protected areas and for conservation are declining;
2. There is a shift and decline in bilateral aid to government resulting in less available financing for conservation management;
3. There is an increase in conservation awareness in the private sector and greater compliance in environmentally sound, socially responsible and economically viable initiatives;
4. There is a growing trend towards nature-based, adventure and marine tourism in national parks;
5. There is a growing interest in market-based business for conservation -more resorts and tourism development in conservation areas;
6. There is a trend towards privatization and decentralization -- role of local government increasing; and
7. Global economic and other factors make these exceptional times, requiring exceptional measures.

The new situation demands innovative thinking and new paradigms in both the promotion of ecotourism and in the development of sustainable conservation programs. This is possible through:

1. Functional collaborative partnerships among the government, the private sector and conservation NGOs;
2. A change in the role of governments through partnership models that take advantage of the skills in both private industry and conservation NGOs to develop initiatives with potential of both earning revenue and improving the quality of the natural environment;
3. Introduction of conservation concessions; and
4. Promoting the business of conservation through maximization of tourism revenues to ensure sustainable conservation.

### *Options and considerations for MPA networks*

Scaling up conservation approaches means looking at marine protected areas as critical nodes in the greater conservation of the oceans' resources. As such, MPAs can be grouped (scientifically) into networks that built on natural factors of mutual replenishment and resilience over a wider scale, enabling them to recover from stresses at a much faster rate. From a scientific and conservation perspective this lifts conservation to a higher level enabling conservationists to protect larger spatial areas. From a financial sustainability perspective, it brings additional challenges, as well as opportunities. How can we find mechanisms that not only ensure financial sustainability in individual MPAs, but also lift financial sustainability to the level of a network of marine protected areas that are interdependently connected?

Firstly, when identifying the networks, it will be critical to ensure that they include areas of interest to the broad public (or areas of particularly high tourist value) in order to generate sufficient revenues to subsidize MPAs that aren't attractive to most visitors. When focusing on the sustainability of a network of protected areas, the intent should be to make the network sustainable as a whole, rather than each individual MPA. This will ensure that even those MPAs with limited options for a diverse portfolio of financing mechanisms are able to cover their basic costs.

One of the most obvious benefits of scaling up to the network level is cross-subsidization of MPAs. This is not uncommon within many national boundaries, where both marine and terrestrial PAs contribute part of their income to the wider network of protected areas, either directly or indirectly. It may not always be the most efficient distribution of revenues, however it is one way of ensuring that all PAs have some of their basic costs covered. Some of the challenges when dealing strictly with a network of MPAs will include finding ways to creatively fit this within the context of government protocol.

In addition to sharing funding, there will probably be ample opportunity for sharing staff, technical expertise and monitoring responsibilities. Costs could also be lowered by transferring lessons across sites – i.e. creating a learning portal for a specific network of MPAs.



### *Diversified portfolio and adaptive financial management*

One criterion necessary for long-term sustainability of marine protected areas and networks is having a diverse portfolio of revenue earning mechanisms. A diverse portfolio of revenue mechanisms could include (a) national income from the government budget; (b) local income, such as revenues from user fees, licenses, sales and royalties, etc.; (c) endowment funds from a trust; (d) co-management agreements, passing off some of the costs of management to primary stakeholders; and (e) voluntary donations. The key is not to rely on any single source of revenue to cover the costs of management. The basic recurrent costs should be covered through reliable sources, and then variable costs can be covered by less consistent sources of funds, such as donor grants.

A second criterion is adaptive financial management. In parallel to what was mentioned under the theme (Adaptive Management), this includes being able to set and monitor indicators, watch for changes in the political, economic and social environment, monitoring trends in local, national, regional and global economies (e.g. tourism trends), predict changes in markets, capture option values of the resource (e.g. future benefits from potential discoveries, changes in technologies, etc.) and constantly link the science of biodiversity conservation to the benefits received. This requires managers to constantly be looking beyond the boundaries of the MPA or network of MPAs, employing dynamic approaches to management and seizing opportunities as they arise.

#### **Key Issues**

1. Spin-offs to local communities are needed
2. Government in the Philippines still has control, and they are least competent. All protected areas have a central trust fund. Want to develop municipal laws for decentralized financing.
3. In Thailand – MPAs are under Forestry. Entrance fees are charged, but still not enough. Goes to the center first, then comes back. Most dive centers are “illegal” and run by outsiders and give no benefits to Thailand.
4. In Malaysia – MPAs run by governments, and they are relatively well-funded. Entrance fees go to the government.
5. Managing MPAs as a group (to spread benefits) or just looking at individuals
6. Need to get tourism community behind user fees.
7. Not just about generating funds, but utilizing your funds effectively.
8. Want to wean MPAs from donor funds, government allocations

#### **Key questions**

1. How can we develop self-financing mechanisms for marine reserves?
2. What kinds of user fee systems should be in place?
3. How can we develop a regional cooperative marketing of marine reserves in Southeast Asia? A conservation investment portfolio for the region?

### **Potential topics for proposals**

- a. Fund an assessment of the portfolios of financing mechanisms currently used by SE Asian MPAs – including a list of effective examples and constraints encountered.
- b. Training for a large group of SE Asian MPA managers to be better conservation businessmen and how to make business plans for their MPAs
- c. Coordinated lobby to establish a series of trust funds for some of the outstanding representative MPAs in the region (five-six)
- d. Development of a guidebook or sourcebook for SE Asian MPA managers for available financing mechanisms – make it into a CD that can be sold
- e. Develop a guidebook/brochure for SE Asian MPAs on how to achieve non-profit and tax deductible status (both within country and for larger donor nations like the US, EU, etc) to enable them to receive grants and donations.
- f. Carrying capacity assessment of a series of SE Asian MPAs (range of reef types) to provide input to MPAs that rely on user fee systems
- g. Coordinated SE Asian MPA marketing campaign in dive magazines – advertising, articles on socialization of MPAs and user fees.
- h. Development of ecolabelling scheme for “TrueBlue MPAs”.
- i. Develop a handbook for appropriate mariculture programs that can be implemented in MPAs as alternative livelihood strategies.
- j. Develop and maintain a database of available volunteer positions in SE Asia’s MPA network – published on a website, distributed to email listservers, published in magazines (dive, nature, conservation publications), etc.
- k. Socioeconomic impacts of marine reserves: ways to generate popular support through financing;
- l. Sustainable tourism in marine reserves;
- m. Mechanisms to effectively raise revenues for marine reserves in Southeast Asia.

### **Suggested specific Actions**

In more general terms, the two recent regional initiatives that assessed the status and performance of MPAs in the region suggested the following actions:

From the Sabah workshop (October 2001), the following could again be useful:

1. To identify the MPAs for networking according to the CAR (comprehensiveness, Adequacy and Representativeness) principles;
2. To clarify strategic goals and develop strategic objectives;
3. To develop operational objectives to achieve the strategic goals of a network of MPAs in the East Asian Seas Region;
4. To undertake ‘performance evaluation’ to assess the effectiveness of the network of MPAs.

From the review made by Alino et al. 2000, the following could guide more actions:

1. To utilize Integrated Coastal Management philosophy in MPA framework;
2. To improve regulatory and non-regulatory mechanisms for sustainable use in multiple use MPAs;
3. To learn from MPA success stories;
4. To establish more functional network of representative MPAs; and
5. To consider the benefits of ecotourism in the conservation and protection of marine biodiversity and its ecological values.

With respect to financing, workshop participants at the 9<sup>th</sup> International Coral Reef Symposium in Bali, Indonesia (2000) identified a suite of regional priorities. Foremost among these was the development of a regional inventory of experiences with sustainable financing. Participants also emphasized the need to build links between individual MPAs, WCPA-Marine Southeast Asia, and key financial organizations. Participants suggested that pilot activities could benefit the entire region by providing a proving ground for legislative frameworks and revenue generating mechanisms such as value-added services and products, user fees, and incentive-based conservation activities.

In more specific terms, the actions to undertake fall under four categories: applying incentive mechanisms; revenue generation; cost sharing and co-management; and financing a network. These are briefly elaborated below:

#### Use incentive mechanisms

These include:

1. Using economic instruments;
2. Giving incentives to the tourist industry;
3. Allowing tradable permits;
4. Advocating use of licenses;
5. Granting compensation payments/subsidies;
6. Providing livelihood/business opportunities;
7. Allowing for management concessions;

#### Revenue generation

The following mechanisms to generate revenues for marine reserves have been shown to work:

1. Donor and government funds;
2. Direct use revenues;
3. International community contributions;
4. User fees;
5. Sales and royalties and product concession fees;
6. Taxation;
7. Voluntary fee systems;
8. Debt-for-nature swaps;

9. Bioprospecting opportunities;
10. Tourism opportunities;
11. Lotteries

#### Cost-sharing; Co-management

Protected areas managers can lower the costs of managing marine protected by sharing the costs and benefits of management with local stakeholders. Putting in place incentive mechanisms, such as new markets, licenses, etc., as discussed in the “incentives” section above are an initial step to increasing the cost-effectiveness within protected areas. In particular, involving key stakeholders directly in the management of the area, either by giving them clear incentives to share in the costs of management or by entering into co-management ventures with local communities or with the private sector (e.g. tourist operators) and other users of the resources, enlisting these agents to invest in and manage some of the costs. The way to succeed with these types of ventures is to ensure that the benefits and costs are transparent and clearly understood by all those involved – in other words, these stakeholders must share a sense of responsibility over the resource. By sharing the costs and benefits of management with the broader group of stakeholders, two objectives are achieved: (1) the direct costs of management are lowered, and (2) the opportunity costs to local communities and are Users are reduced.

#### Financing a network of marine reserves

From a financial sustainability perspective, a network of marine reserves brings additional challenges, as well as opportunities, compared to a single marine reserve. How can we find mechanisms that not only ensure financial sustainability in individual MPAs, but also lift financial sustainability to the level of a network of marine protected areas that are interdependently connected?

Firstly, when identifying the networks, it will be critical to ensure that they include areas of interest to the broad public (or areas of particularly high tourist value) in order to generate sufficient revenues to subsidize MPAs that aren’t attractive to most visitors. When focusing on the sustainability of a network of protected areas, the intent should be to make the network sustainable as a whole, rather than each individual MPA. This will ensure that even those MPAs with limited options for a diverse portfolio of financing mechanisms are able to cover their basic costs. One of the most obvious benefits of scaling up to the network level is cross-subsidization of MPAs. This is not uncommon within many national boundaries (see box 13), where both marine and terrestrial PAs contribute part of their income to the wider network of protected areas, either directly or indirectly (see box 20). It may not always be the most efficient distribution of revenues, however it is one way of ensuring that all PAs have some of their basic costs covered. Some of the challenges when dealing strictly with a network of MPAs will include finding ways to creatively fit this within the context of government protocol.

Networks of MPAs that cross international boundaries elevate the challenge to a higher level. However, in the case of the Meso-American reef, this challenge has been

taken up. TNC and World Wide Fund are currently working with four trust funds in four different countries to create an ecoregion endowment fund for the entire ecoregion. However, as seen in Bonaire, these types of regional trust funds must have full buy-in from all stakeholders at all stages. SPREP is currently setting up a similar mechanism for the Pacific island states.

For these types of networks, there may also be potential to access regional financing. For instance, creating programs to reinvest tax revenues from the Western Pacific Tuna fishery back into the management of this and other resources. Another potential way to increase the effectiveness of MPAs within a network is to establish incentive mechanisms for better management on the ground, encouraging competition among reserves (e.g. competing for funds based on the effectiveness of their management). In order to do this effectively, the criteria for good management need to be identified. This is being done in the Philippines, where a certification system and an economic valuation framework are being developed and applied to community-based MPAs. The certification and rating system encourages improved governance and standardization of field results by attaching ecological and monetary values to well-managed MPAs. This then fosters more investment. Furthermore, the results will, in time, serve to indicate the most effective management methods.

### **Sources of Funding for Protected Areas**

Sources of funding for marine reserves include international level mechanisms (multilateral banks, etc.), The Global Environment Facility (GEF), bilateral development co-operation agencies, Foundations and international NGOs with an international dispatch. There are, likewise, alternative financial mechanisms that can be tapped, e.g. carbon offsets or sequestration payments, global levies, innovative ways to use the Internet, and global environmental and cultural funds. In addition, there are 'other mechanisms' which are likewise helpful e.g. planned giving.

## **CRITERIA AND FORMAT OF PROPOSALS**

Below are the criteria and format of the proposals. As far as practicable, these should be followed in order to improve the chances of a proposal to be included in the priority (short) list.

### **Criteria for selection**

For a proposal to be acceptable, it should satisfy the following minimum requirements:

1. It should underline the RAP call for action (along the thrusts of RAP);
2. Its proposed site(s) should be high priority area(s) for marine biodiversity;
3. It should enhance regional collaboration and south-south exchanges;
4. It should be high in national and regional priorities;

5. It should strengthen the connectivity of marine reserves;
6. It should strengthen on-site management;
7. It should promote equitable distribution of benefits among stakeholders;
8. It should be specific and 'tangible';
9. It should have the commitment of an executing agency and partners;
10. It should be feasible, with a high degree of success;
11. It should produce measurable outputs;
12. It should ensure sustainability of proposed activities

## **Format**

The following is the required format of a proposal:

TITLE (Specify whether a short project or a multi-year programme)

THEME (see the 5 themes of the workshop)

BACKGROUND

GOALS AND OBJECTIVES

JUSTIFICATION

PROPONENT(S) AND COORDINATOR (Indicate who the primary contact is)

AFFILIATIONS

CONTACT ADDRESSES/NUMBERS

PARTNERS

NATIONAL/REGIONAL COVERAGE

(area in km<sup>2</sup>, countries involved)

PRIORITY (Why is the proposal high in national/regional priority?)

WORKPLAN

TIME FRAME (initially, not more than 5 years)

OUTPUTS

MONITORING AND REVIEW

INDICATIVE BUDGET (US\$)

## **PORTFOLIO OF PROPOSALS**

### WORKING GROUP 1: Planning and Design

#### **Proposal 1: Establishment of SEA MPA Network Secretariat to Develop Proposals and Solicit Funding for the Implementation of Action Plan**

Timeframe: Ongoing

Indicative Budget: \$50,000 / yr

#### **Proposal 2: Development of information base and technical expertise to design a SEA MPA Network.**

Time frame: 2 years

Indicative Budget: \$70,000.

**Proposal 3: Development of ecological and social frameworks for MPA network in SEA (Prop 3) Identify gaps in SE Asia (Prop 1)**

Time Frame: 1.5-2 Years

Indicative Budget:\$45,000

**Proposal 4: Development and promotion of institutional framework for SEA MPA network. Identify and enlist contribution of specific MPA sites and categorize their role or function in the network**

Time frame: 2-3 years

Indicative Budget: \$130,000

**Proposal 5: Development of an implementation plan for SEA MPA Network (including scientific, management, and social aspects)**

Time frame: 2 years, simultaneous with the development of the framework.

Indicative Budget: \$150,000

**Proposal 6: Strengthening and expansion of technical capacity of SEA MPA Develop specific guidelines for specific MPAs in network**

Time Frame: 3-5 Years

Indicative Budget: \$1,000,000

WORKING GROUP 2: Adaptive Management

**Proposal 1: Adaptive Management Training for MPA Managers**

Timeframe: 3 years

Indicative budget: US\$ 250,000

**Proposal 2: Development of rating and certification system for MPA management in Southeast Asia**

Timeframe: Three years for Phase 1 and 3 years for Phase 2

Indicative budget:

Phase I: US\$ 400,000

Phase II: US\$ 300,000

**Proposal 3: Comparative Case Studies on Adaptive Management**

Timeframe (initially, not more than 5 yrs): 2 yrs

Indicative budget: US\$150,000

**Proposal 4: Extended Cost Benefit Analysis of Tioman Island as a MPA**

Timeframe: 24 months

Indicative budget: US\$ 70,000

WORKING GROUP 3: Coordination and Enforcement

**Proposal 1: Developing “Best Practices” Model for Effective Community Enforcement Legislation**

Timeframe: May 2003- February 2005

Indicative Budget: \$110,000

**Proposal 2: Assessment of MPA enforcement activities: learning lessons and producing guidelines through best practice case studies**

Timeframe: June 2002-December 2002

Indicative Budget: \$178,000

**Proposal 3: Capacity Building for MPA Enforcement from Community to Judiciary**

Timeframe: March 2003 – June 2004

Indicative Budget: \$ 290,000

WORKING GROUP 4: Community Awareness, Involvement and Development

**Proposal 1: Development of a comprehensive study tour program to mobilize support for co-managed MPAs in the region.**

Time frame: (initially; not more than 5 years): 3 years

Indicative budget(s) (in US\$): **NOT PROVIDED**

**Proposal 2: Improvement and development of community outreach media**

Time frame: 2002 - 2005

Indicative budget: **NOT PROVIDED**

**Proposal 3: Conservation Concepts in Formal Education**

Timeframe: NOT PROVIDED

Indicative budget (in US\$): NOT PROVIDED

**Proposal 4: Documentation and Regional Dissemination of Processes Leading to Community Involvement and Empowerment**

Time frame (initially; not more than 5 years): 3 years

Indicative budget(s) (in US\$): 200,000 US\$

**Proposal 5: Broad Public Awareness of the benefits of broad-based MPA co-management approaches in SEA**

**Sub-proposal 1: Adaptation, Development and Distribution of General Awareness Medias of MPAs on Regional of SEA**

Time frame: 2002-2005

Indicative Budget(Us\$): NOT PROVIDED



**Sub-proposal 2: Creation and maintenance of a thematic focal point and national focal points for awareness, inv., ...**

Time frame (initially; not more than 5 years): 5 years

Indicative budget(s) (in US\$): **NOT PROVIDED**

WORKING GROUP 5: Sustainable Financing

**Proposal 1: Facilitation of sustainable tourism development and promotion for SE Asia's MPA network as a means of improving financial stability of the network.**

Time Frame: 2 years

Indicative Budget: \$730,000

**Proposal 2: Training Program on Sustainable Financing for MPAs Managers (multi year program)**

Time Frame: 2002 - 2005

Indicative Budget (US\$): \$80,000

**Proposal 3: Desktop study/evaluation of the portfolio of available financing mechanisms for SE Asian MPAs, paying particular attention to successful SE Asian examples, constraints in SE Asia, proven legal mechanisms to retain user fees at the local level, optimal budgets for SE Asian MPAs, and evaluation of the trend towards privatization of MPAs and its applicability in the SE Asian context.**

Time frame: 1 year

Indicative Budget: \$77,000

**Proposal 4: Cost Benefit Analysis and Economic Evaluation of selected MPA in South East Asia**

Time Frame: 2003 -2004

Indicative Budget (US\$) for 5 countries: \$ 225,000

**Proposal 5: Evaluation and implementation of MPA trust funds in SE Asia.**

Time Frame: One-year

Indicative Budget: \$120,000

## CONCLUSION

In retrospect, RAP intends: (1) to document where and how a variety of sustainable mechanisms have been employed in enhancing the effectiveness of marine reserves, including innovative mechanisms being tested, as well as those still in concept; (2) to discuss with participants sustainable mechanisms for enhancing the effectiveness from a network perspective, and (3) to illustrate the importance of and need for

‘managing’ a diverse system of marine reserves in equally dauntingly diverse Southeast Asia. The report draws on discussions with researchers, practitioners, marine park managers, government representatives and academics with experience in coastal and marine conservation in the region and from different parts of the world. It also takes examples, ideas and discussions from current literature, including case studies, research papers, and innovative ideas currently being tested.

The RAP does not incorporate examples and lessons from all the mechanisms being implemented in a variety of contexts, and therefore should be considered a “work in progress,” providing an initial step towards documenting, monitoring and evaluating mechanisms and methodologies for achieving effectiveness and sustainability in marine reserves and networks of marine reserves. An important next step will be to analyze individual analytical methodologies and mechanisms being used in different contexts – regional, situational, cultural, etc. – and to extract lessons from each of these mechanisms or methodologies based on a wide range of experiences.

Indeed, while management of marine reserves is fundamentally technical in nature, it is also a question of values and goals. It is technical because it is a function of the quantity and quality of resources of an area and the tolerance of its resources to use. And it is a question of values and goals because it is a function of the number of users, the type of use, its design and management of associated manpower and facilities, and the attitude and behavior of both intended users and managers of the reserves. For an effective management of marine reserves in Southeast Asia, we need plans that start with a value discussion and ends up with general and operational goals: what kind of marine reserve or a network do we want and what kind of social, cultural and environmental qualities do we want to keep or strive for? . These plans, however, need to be tested for realism under existing conditions of scarce resources and established environmental quality standards. These goals should also be the value base for establishing and addressing national and regional marine and coastal environmental concerns. Because of the region’s great variety in culture and interests, such goals should be decided after a comprehensive planning process with broad input from the different interest groups.

The RAP presents some of today’s approaches to enhance the effectiveness of marine reserves in Southeast Asia. These revolve around main coastal and marine environmental concerns that have profound implications on the management of marine reserves or networks of marine reserves. They are a result of successes, which are largely defined in yesterday’s terms. An extension of the past, however, is not necessarily the right prescription for the future.

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Below are the main references used to develop the RAP. They are keyed to the 5 themes of the project. The focus of some references, however, cuts across a number of themes, so that for simplicity, these are placed only under the theme they primarily are concerned about. Others not included here are the websites, databases, and other materials e.g. pamphlets, flyers, which are also useful. Some of the entries are yet incomplete (undated, un-authored). The entries are available from my personal library,

TNC Bali, PEMSEA and ICLARM (World Fish Centre) Libraries. The rest are accessible via the net.

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